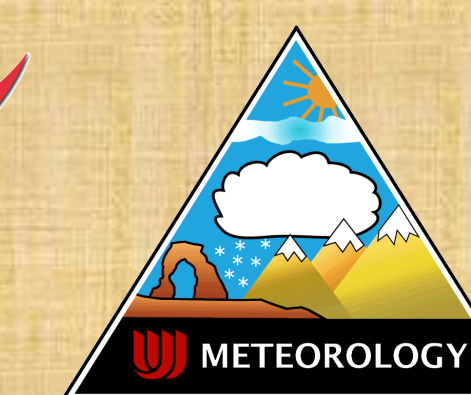
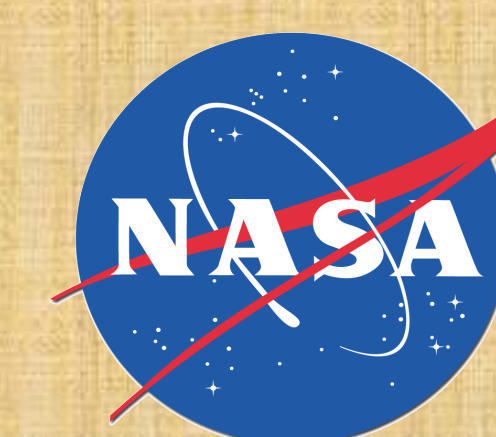




Online access of regional climatology of precipitation and clouds from 14 years of TRMM and 5 years of CloudSat observations



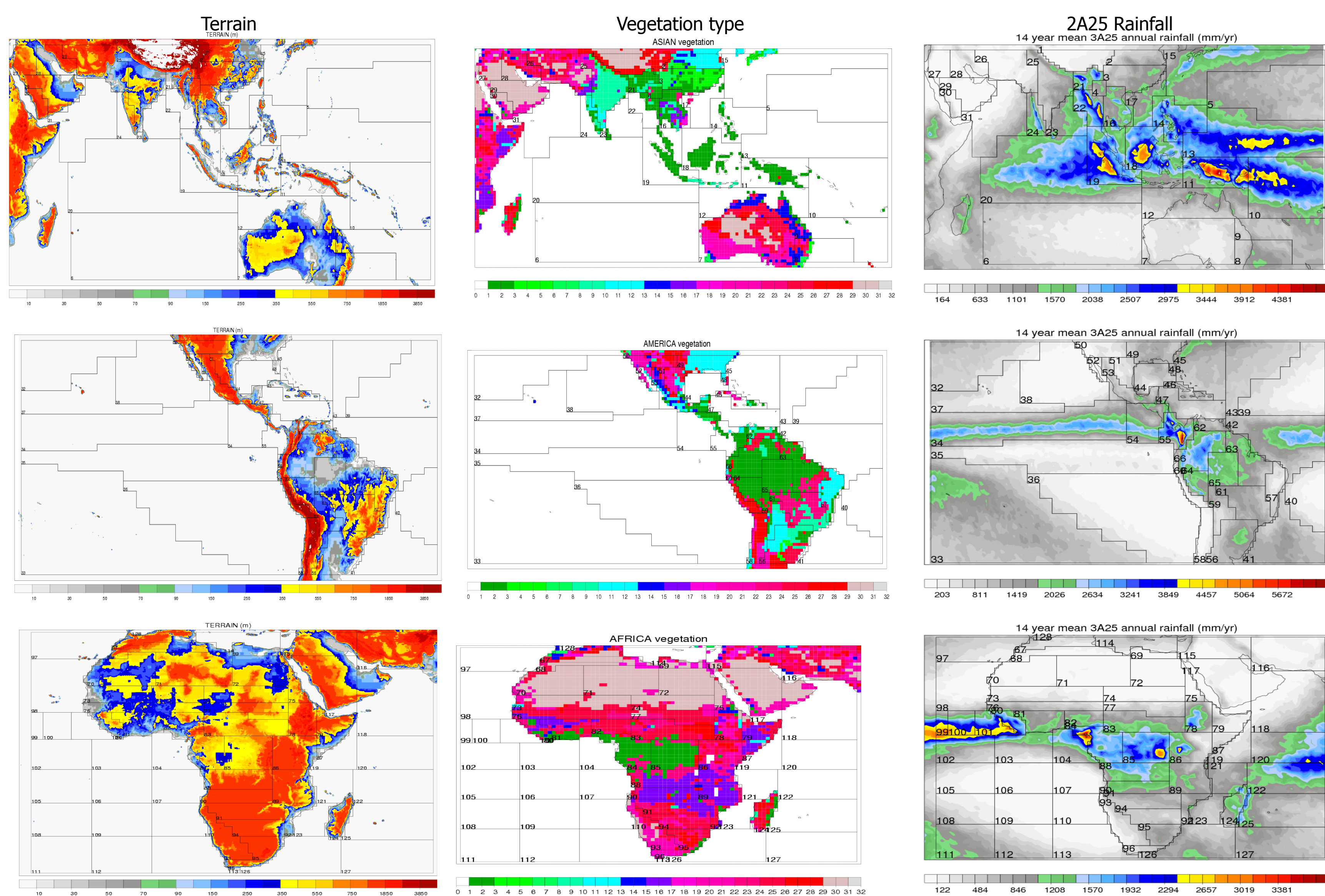
Chuntao Liu¹, Ed Zipser¹, and Erich Stocker² 1. Department of Atmospheric Sciences, University of Utah 2. GSFC, NASA

Motivation

There are many WWW resources providing online access and plotting of NASA and NOAA satellite data. Most of them are for orbital, daily, monthly and annual mean products. However, none of them provides general climatology, such as seasonal and diurnal variations of precipitation and clouds and properties of precipitation systems for selected regions.

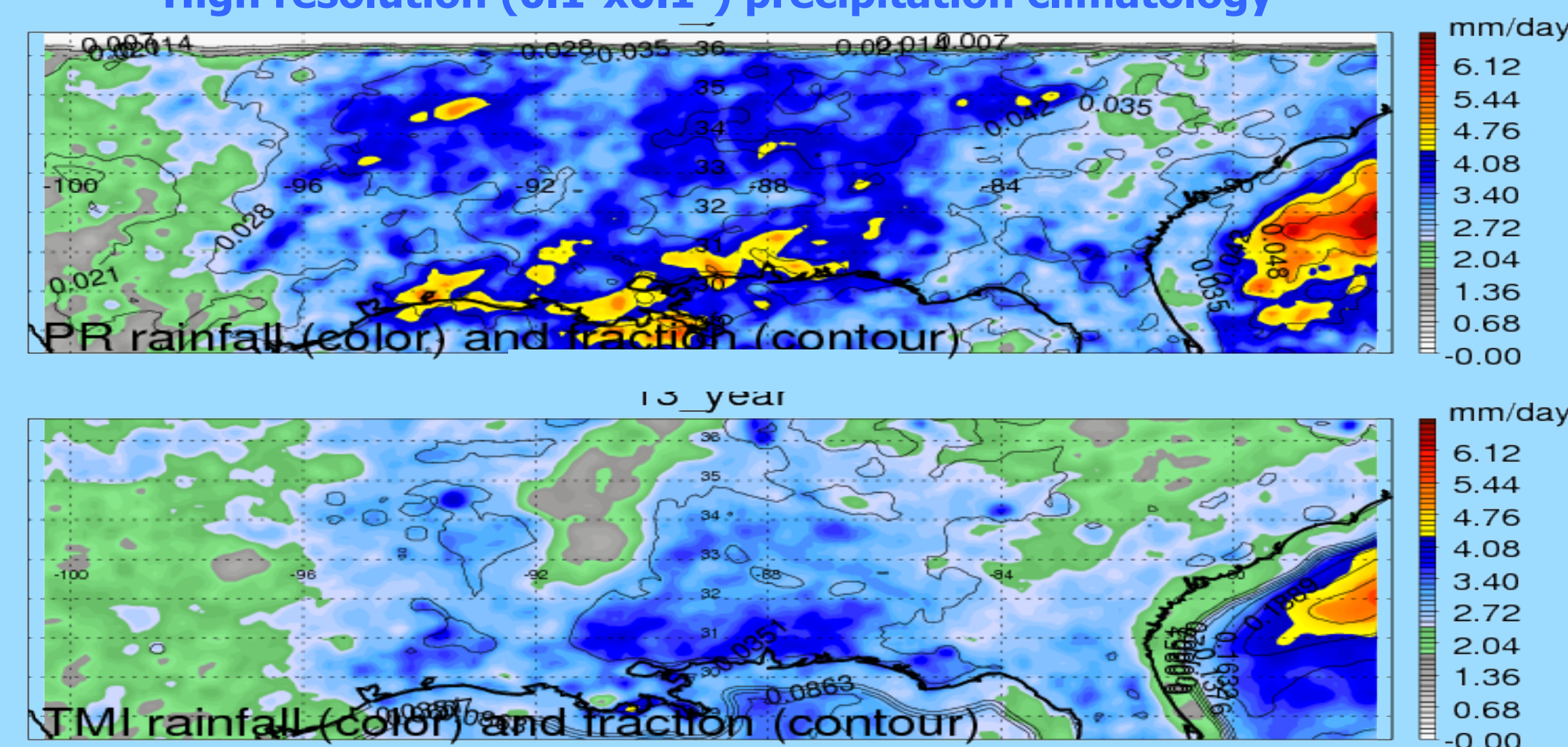
Data and method

The whole TRMM domain (36°S-36°N) is divided into 128 regions based on topography, vegetation and precipitation. Full reports of statistics of precipitation and clouds and properties of precipitation systems are analyzed using 14 years (1998-2011) of TRMM and 5 years (2006-2011) of CloudSat observations over various regions.

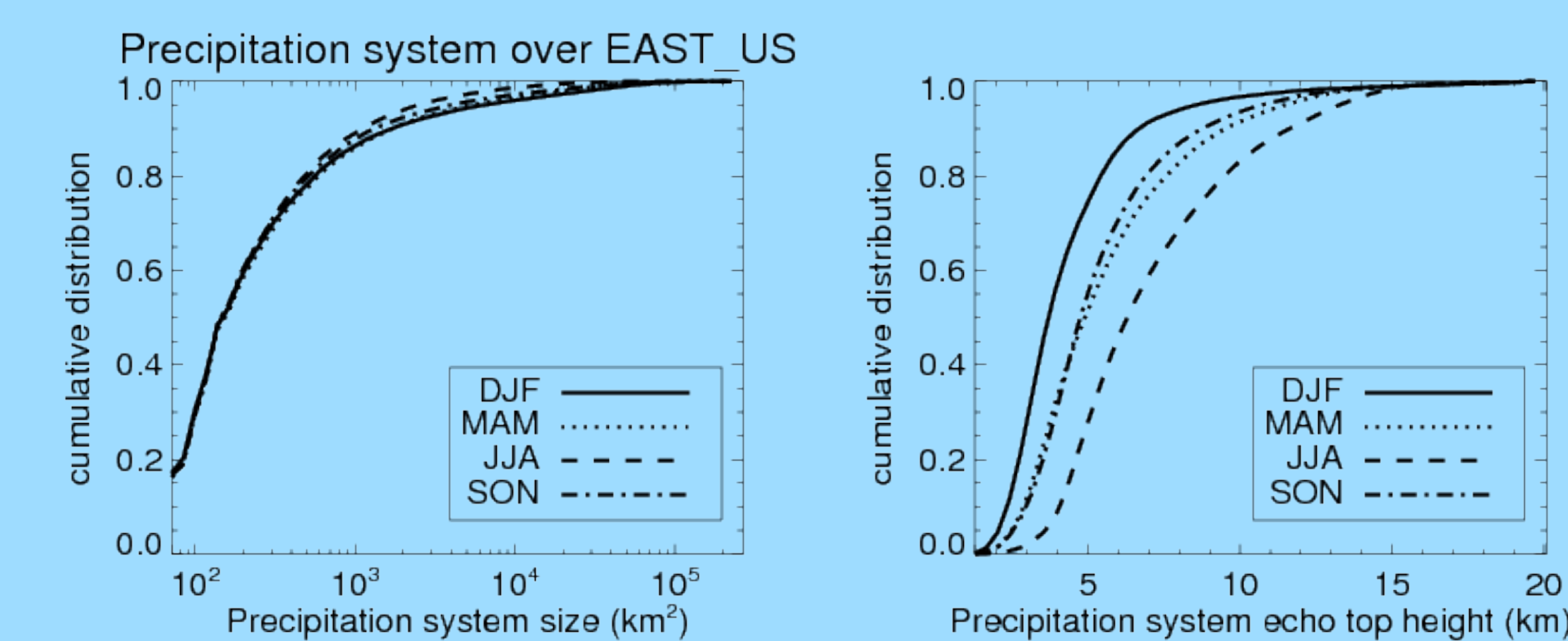


Regional climatology of precipitation from TRMM (Version 7)

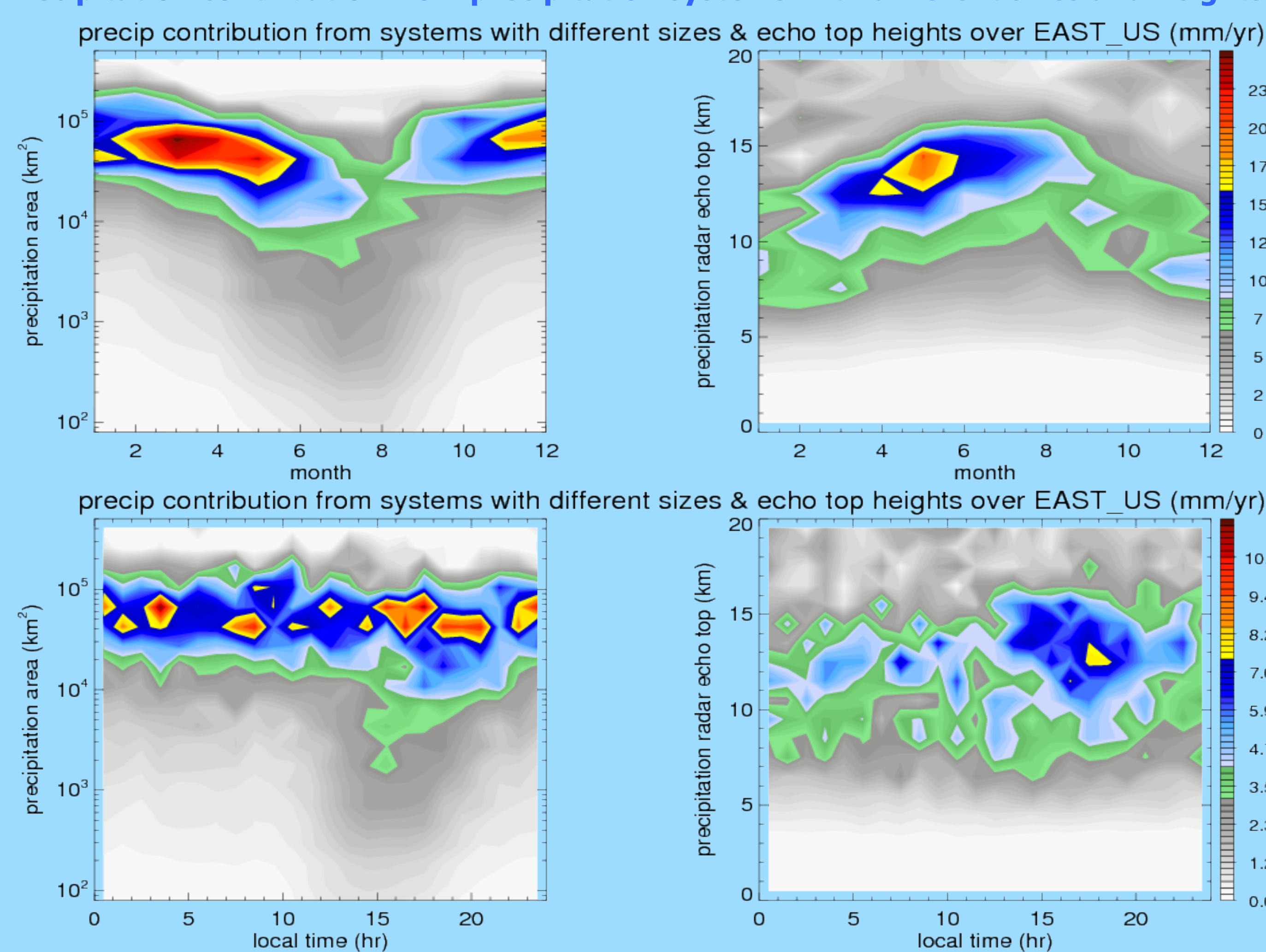
High resolution (0.1°x0.1°) precipitation climatology



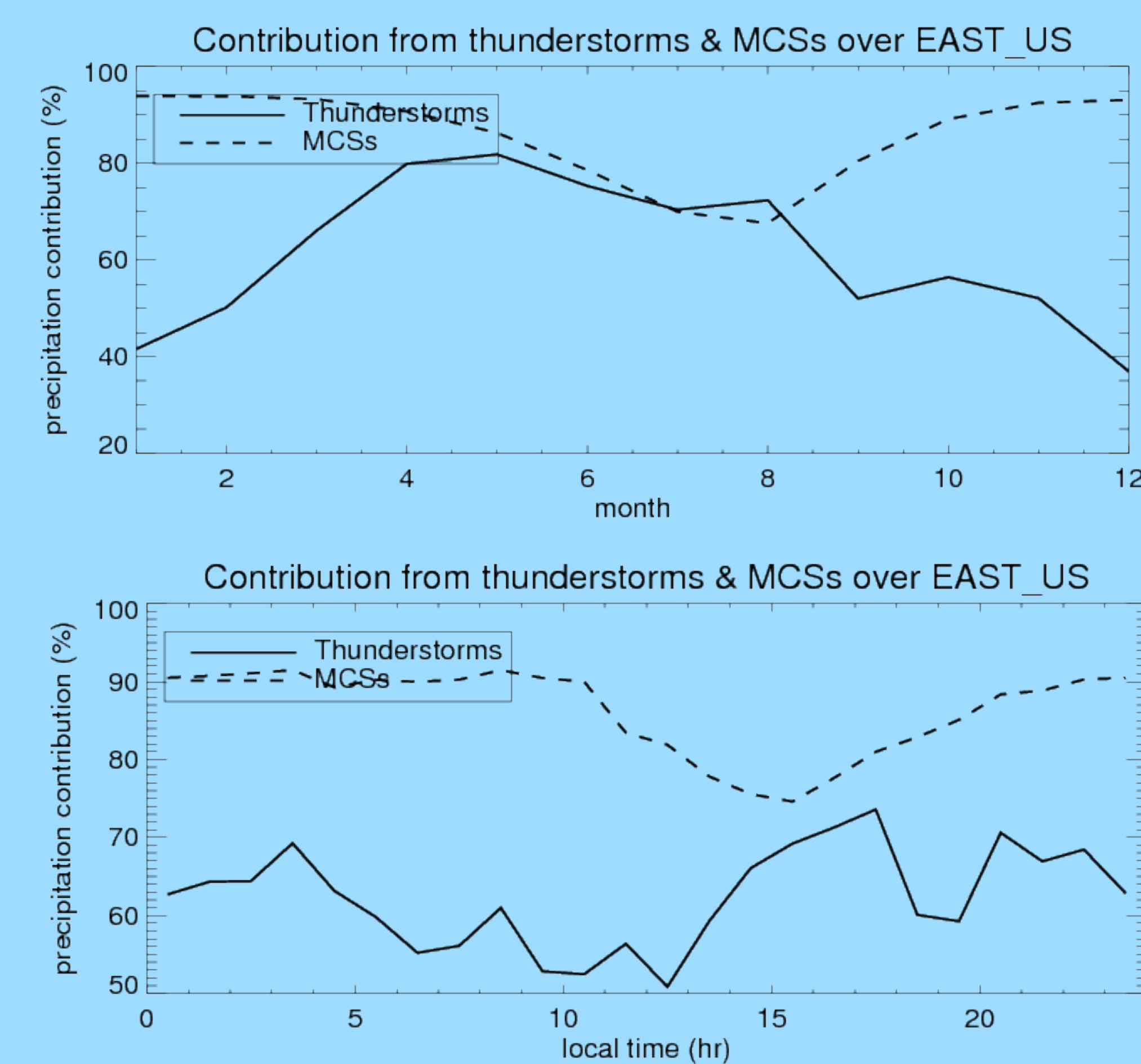
Properties of precipitation systems



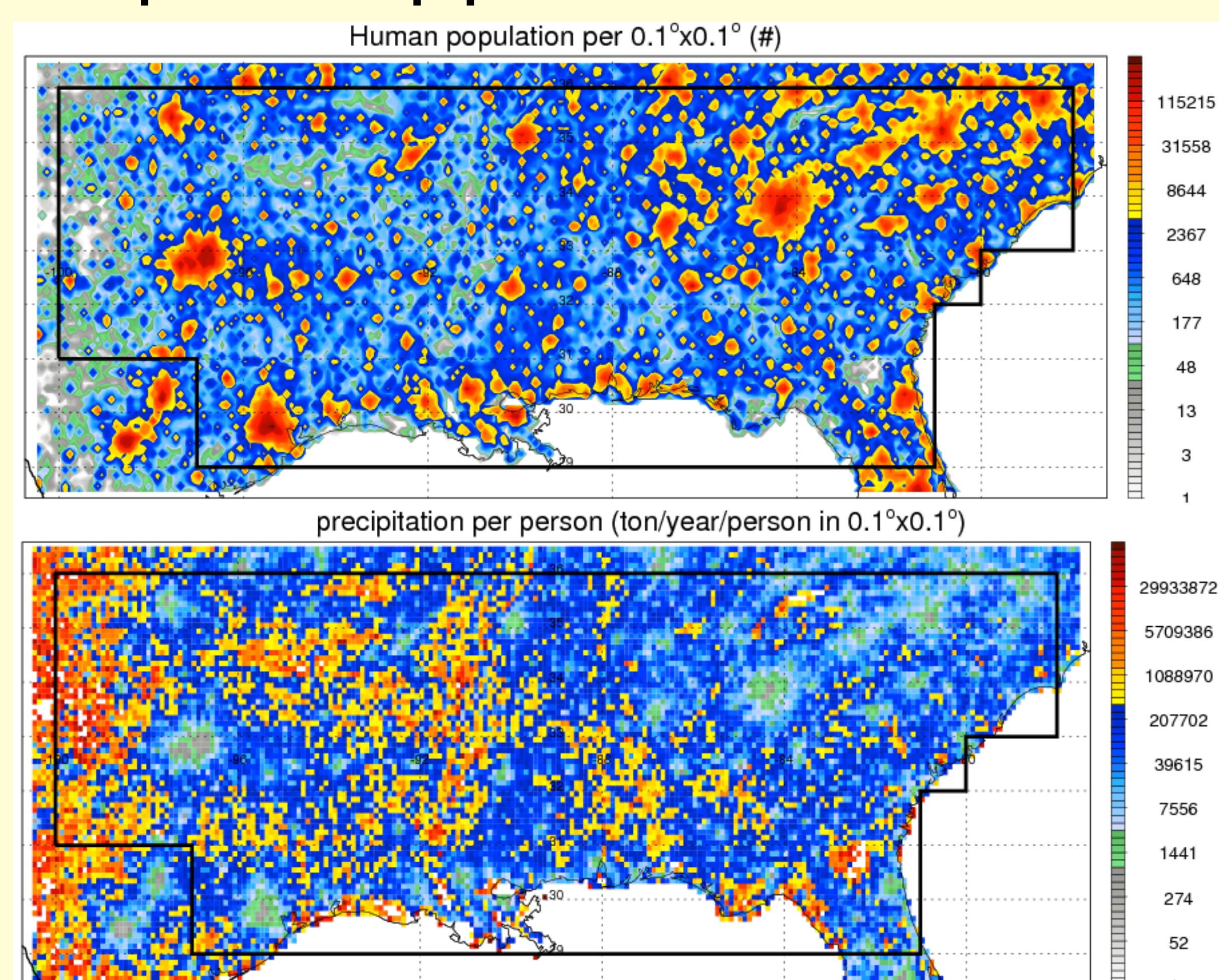
Precipitation contribution from precipitation systems with different sizes and heights



Precipitation contribution from thunderstorms and MCSs

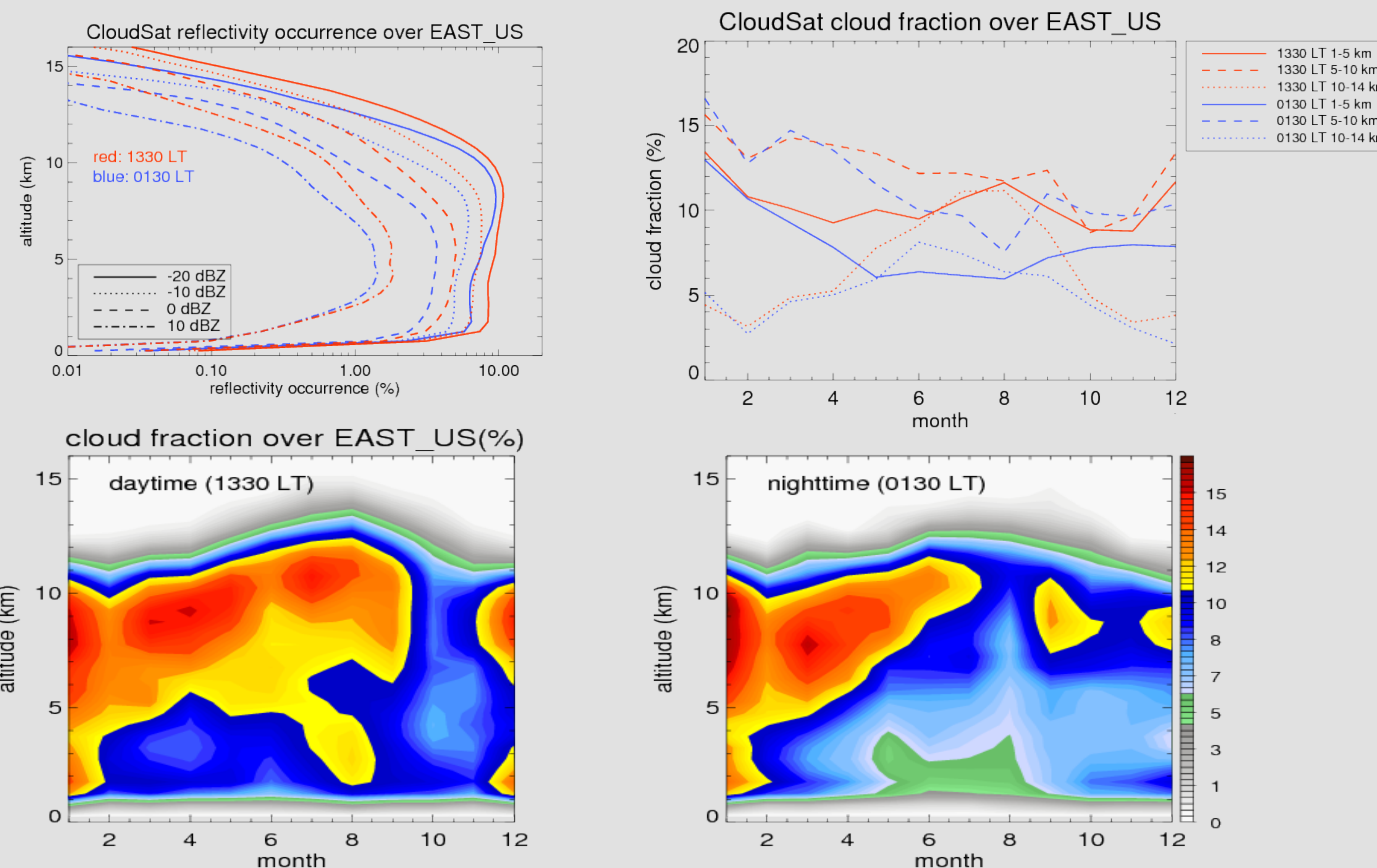


Precipitation and population



Combining the climatology of precipitation and data on population, it is possible to more quantitatively understanding the relationship between precipitation and population. Current study is very preliminary. Collaboration is needed, especially on the estimation of surface evaporation and underground water supply from hydrologists.

Regional climatology of Cloud fractions from CloudSat



Online access and define your own regions

<http://trmm.chpc.utah.edu/>

Click links below for climatology:

- 021: BNGL
- 022: E_BAY_BNGL
- 023: W_BAY_BNGL
- 024: W_INDIA_COAST
- 025: INDIA
- 026: IRAN
- 027: NORTH_ARAB
- 028: IRAQ
- 029: SAUDI
- 030: YEMEN
- 031: ARABIAN_SEA
- 032: NC_PACIFIC
- 033: E_SPCZ
- 034: W_PACIFIC_ITCZ
- 035: SOUTH_ITCZ

Define your own region and find out the behavior of cloud and precipitation:

Latitude: From to range from -36 to 36
 Longitude: From to range from -180 to 180

Note: It takes a few minutes to generate the results. Do not close the popup window.

Summary

Examples of climatology of precipitation and clouds over Southeast US are shown here. Many other statistics, such as geographical distribution of precipitation and cloud in different seasons and local times and extreme events observed by TRMM, are analyzed and available online for other 127 regions and any user defined regions. Please visit the website <http://trmm.chpc.utah.edu/> for details.

Acknowledgements:

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